

# Work Order ID 55135

January 6, 2010 3:56:43 PM

Page 1

Item ID: D407-667-105

Accept

Setup Start

Revision ID:

Stop

Item Name: Crosstube Fwd

Start Date: 07/01/2010 Start Qty: 1.00

Cust Item ID:

Required Date: 28/01/2010 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan:

Date: 10-1-04 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D407-667-145

Rev C

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D407-667-105 CHG003

for MF 10/02/25

110

0.00



Packaging

Packaging

Memo

0.00

Packaging

MB 10-02-08

120

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D407-667-145 using CNC bender program 407-fw and Folio FT016

MB 10-02-08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 55135**

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Item ID: D407-667-105

Accept

Setup Start

Revision ID:

Stop

Item Name: Crosstube Fwd

Start Date: 07/01/2010 Start Qty: 100

Cust Item ID:

Required Date: 28/01/2010 Req'd Qty: 100

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 QC Quality Control	QC15- Crosstube Dimensional Check  Memo	0.00 0.00	2) 810/02/08			(70)			
140 Crosstubes Crosstubes	Crosstubes  Memo 1- scribe batch # inside of cuff □ 2- Drill pilot holes in tube using drill Jig DT8541 & DT8542 as per Dwg D407-667-145. Drill all (3) top holes. □ 3- Drill and Ream all holes in tube to finish size using drill Jig DT8541 & DT8542 as per Dwg D407-667-145 Check	0.00 0.00				(1X)	Q	AWM ms	09-10-09
150 HandFXtube Hand Finishing Crosstubes	Crosstubes Chemical Conversion  Memo	0.00 0.00				1	-	AWM	10-2-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Item ID: D407-667-105

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Stop



Item Name: Crosstube Fwd

Start Date: 07/01/2009 Start Qty: 1.00



Item ID:

Required Date: 28/01/2010 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 	QC3- Inspect Part Finish	0.00							
QC Quality Control	Memo	0.00							
170 	QC5- Inspect part completeness to step on W/O	0.00							
QC Quality Control	Memo	0.00							
180 	Outsource process - NDT per QSI038 4.1	0.00							
Outsource2 Outsource process - NDT	Memo Liquid Penetrant Inspection as per QSI 038 Or <input type="checkbox"/> Issue P/O <u>11364</u> LPI as per ASTM 1417 <input type="checkbox"/> Level 2 Attach copy of NDT results to work order	0.00							

BD 10-2-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Item ID: D407-667-105

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Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd

Start Date: 07/01/2010 Start Qty: 1.00



Cust Item ID:

Require Date: 28/01/2010 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

190

0.00



Packaging

Packaging

Memo

0.00

Packaging

Inspect for transit damage ☐ Ensure copy of NDT results attached to work order.

*Signature*

200

0.00



<sup>QC5</sup>  
~~QC6~~ Inspect dimensions to drawing

QC

Memo

0.00

Quality Control

Inspect for damage & ensure results are as per Dwg D206-667-145

*Signature* 10 02 17 (1)

210

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2 ☐ 2-Paint outside crosstube with White Imron as per QSI 005 4.2 ☐ PRIME ☐ Start  
Time: 8:00 ☐ Finish Time: 9:00 :PAINT: ☐ Start  
Time: 1:00 ☐ Finish Time: 2:00

*Signature* 10 02 18 (1)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Work Order ID 55135

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Setup Start

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Item Name: Crosstube Fwd

Start Date: 07/01/2010 Start Qty: 1.00

Cust Item ID:

Required Date: 28/01/2010 Req'd Qty: 1.00

Customer:

Reference:

Run Start

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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220 QC14- Inspect Spray Paint

0.00



QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

10-02-22

230

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI 015. Let cure for 12h after installation and prior to packaging. Note (3) top holes should be facing up. A/R Magnobond 6398 : 11/24/17 exp 04/2001  
Torque clamps to 80-100 in lb 3 → ml 10.02.24

10 02 23

240

0.00



QC

QC5- Inspect part completeness to step on W/O

Memo

0.00

Quality Control

8/10/25

70

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 55135**

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Page 6

Item ID: D407-667-105

Accept

Setup Start

Revision ID:

Stop

Item Name: Crosstube Fwd

Start Date: 07/01/2010 Start Qty: 1.00

Cust Item ID:

Required Date: 28/01/2010 Req'd Qty: 1.00

Customer:

Reference:

Run Start

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

10-2-25 sf

260

QC4- 100% inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

8/0/02/25

(40)

270

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D407-667-  
105 □ Location: \_\_\_\_\_ □ PPP Rev: \_\_\_\_\_

10-2-26 sf

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 55135**

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Page 7

Item ID: D407-667-105

Accept

Setup Start

Revision ID:

Stop

Item Name: Crosstube Fwd

Start Date: 07/01/2010 Sta Qty: 1.00

Cust Item

Required Date: 28/01/2010 Req Qty: 1.00

Customer:

Reference:

Run Start

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/03/02

PL 10-2-24  
①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

January 6, 2010 3:56:48 PM

Page 1

Work Order ID: 55135

Parent Item: D407-667-105

Parent Item Name: Crosstube Fwd

Start Date: 07/01/2010

Required Date: 22/01/2010

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Round Seq	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
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AN960JDS16

Purchased

No

100

Each

589.0000

18.0000



Washer

NA51149005631

QSI 917  
54

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

589

110363

46

110523

57

111279

39

112082

64

112314

14

112828

18

113149

351

D2873-043

Manufactured

No

230

Each

49.0000

2.0000



Nut Plate Assembly

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

49

45370

2

45422

1

50002

6

50871

20

53966

20

1113524  
1022-25

sf

10 02 24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

January 6, 2010 3:56:48 PM

Work Order ID: 55135



Parent Item: D407-667-105



Parent Item Name: Crosstube Fwd

Start Date: 07/01/2010

Required Date: 28/01/2010

Comments:

Start Qty: 1.00

Required Qty: 1.00

Consequent Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Item Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Item Issued	Status
D2873-045		Manufactured	No			230	Each	67.0000	2.0000			
Nut Plate Assembly												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	67	
45210	3	
50001	24	
53967	20	
53968	20	

*md 10 02 24*

D2891-1		Manufactured	No			230	Each	67.0000	2.0000			
2.25 Support												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	67	
40336	1	
43880	18	
46159	20	
50952	20	
53347	8	

*md 10 02 23*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

January 6, 2010 3:56:48 PM

Work Order ID: 55135



Parent Item: D407-667-105



Parent Item Name: Crosstube Fwd

Start Date: 07/01/2010

Required Date: 28/01/2010

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Inventory Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D407-667-105TRN		Manufactured	No			230	Each	2.0000	1.0000			

Crosstube Turning Detail

MB 10-02-08

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
LG	2	
53387	1	
53388	1	

14 ✓

MS21920-20

Purchased

No



230

Each

115.3000

4.0000



Clamp (per MIL-DTL-8783C)

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	115.3	
103478	2	
106484	12	
109269	9.3	
110536	10	
112307	32	
112624	39	
112793	11	

MB 10 02 23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Work Order ID: 55135

Parent Item: D407-667-105

Parent Item Name: Crosstube Fwd

Start Date: 07/01/2010


Required Date: 28/01/2010

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfr Part	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
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AN5-10A		Purchased	No			260	Each	208.0000	10.0000			
												
Bolt												


10-2-255

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	208	
107013	8	
110363	2	
112314	1	
112933	14	
113149	50	
113255	33	
113524	100	

AN5-30A		Purchased	No			260	Each	71.0000	4.0000			
												
BOLT												

10

10-2-255

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	71	
110467	21	
112933	50	

4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Parent Item Name: Crosstube Fwd

Start Date: 07/01/2010

Required Date: 28/01/2010

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN5-32A		Purchased	No			260	Each	179.0000	4.0000			



Bolt

10-2-285

Warehouse	Loc Qty	Loc Code
<u>Location</u>		
Main Warehouse		
ST	179	
106242	3	
106519	4	
110363	17	
112805	5	
112933	50	
113121	100	

MS20601-AD4W10

Purchased

No

260

Each

173.0000

14.0000



RIVET

Warehouse	Loc Qty	Loc Code
<u>Location</u>		
Main Warehouse		
ST	173	
110665	30	
111177	43	
113220	100	

10 02 24

January 6, 2010 3:56:48 PM

Shop Packet Print

Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Work Order ID: 55135

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Parent Item Name: Crosstube Fwd

Comments:

Start Date: 07/01/2010

Required Date: 28/01/2010

Start Qty: 1.00

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Component Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------	---------------------	------------	----------	------------------	---------------	--------------	-----------------	-------------	-----------------------	------------	-------------	--------

MS21042L5

Purchased

No

260

Each

1,005.000

4.0000



Nut

10-2-25

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

1005

110382

10

111636

11

112314

484

113523

300

113537

200

4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

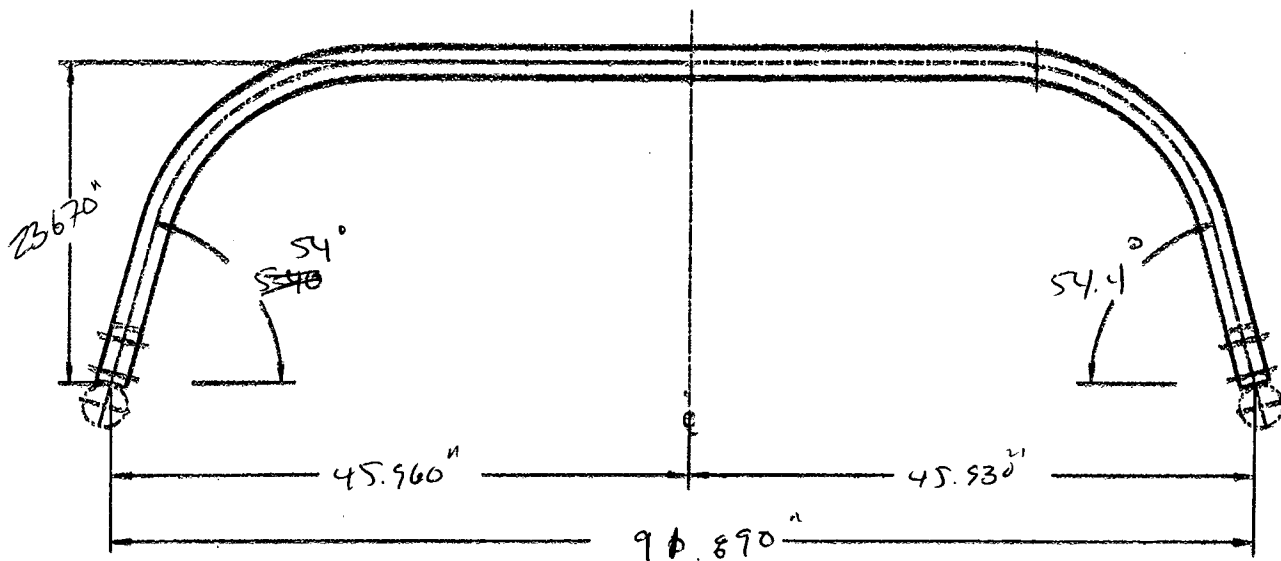
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DART AEROSPACE LTD		Work Order:	55735
Description: Crosstube High Fwd (407)		Part Number:	D407-007-100
Inspection Dwg: D407-007-145 Rev: C		Page 1 of 1	

Required Dimension	Min	Max
Height	29.41	29.67
1/2 Span	46.81	46.07
Angle	54	56
Total Span	91.63	92.13



Comments

QC15 Inspection	6
Date	10/02/06

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.11.12	Dimensions updated per Dwg Rev C	KJ	

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**NOTE:** Date & initial all entries

Item	Qty -145	Part Number	Description
1	X	D407-667-145	CROSSTUBE ASSEMBLY (407 HIGH FWD)
2	1	D6010-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR N: S21920-21)
8	14	MS20601AD4W 10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION R80-120-023 ADHESIVE (TEXTRON/CELL SPEC. 299- 907-100, TYPE II, CLASS 2 ADHESIVE)

# GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6010-115  
FINISHED LENGTH = 112.20 ± 0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-145" AND BATCH NUMBER ON  
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 17.8 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY.  
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE  
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.02" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER  
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE  
THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS  
ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE  
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS  
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT  
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 60 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN  
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY  
RETURN TO:  
ENGINEER  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 75735  
*PM 10-1-06*

RELEASED  
*05/11/12*

C	REVISE GENERAL NOTES/PART LIST (EN 27-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-420-584 (EN 06-2 & 05-2); REMOVED REF. 7 ADD TOLERANCES (EN 06-3, 04-3, 02-3); RELOCATED FLAG #6 (EN 02-3) PER INC 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	02.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHTAA SKID TUBES	PH	05.27.05
A	NEW ISSUE	CP	02.08.05
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD	
DRAWN	RF	MARKESBURY, ONTARIO, CANADA	
DESIGNED	<i>[Signature]</i>	DRAWING NO.	REN. IC
ENG. APPR.	<i>[Signature]</i>	D407-667-145	SHEET 1 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DATE	08.11.06	CROSSTUBE ASSY (407 HIGH FWD)	DATE

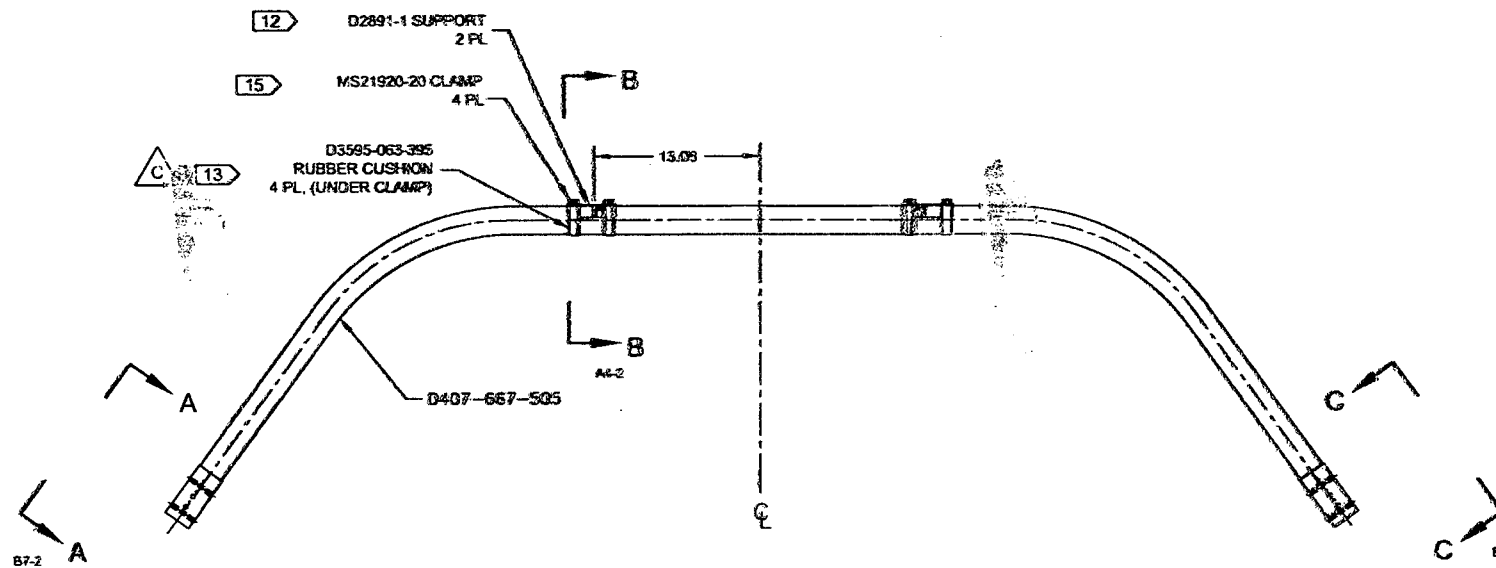
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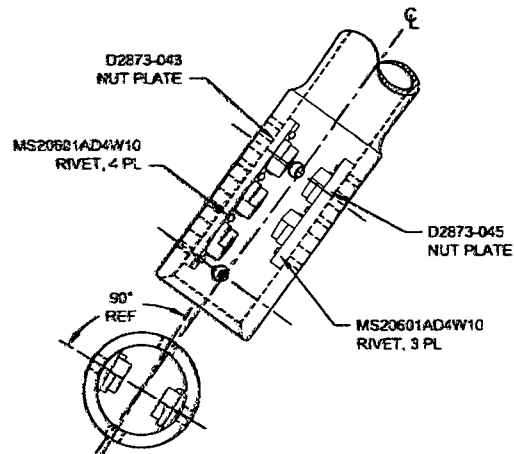
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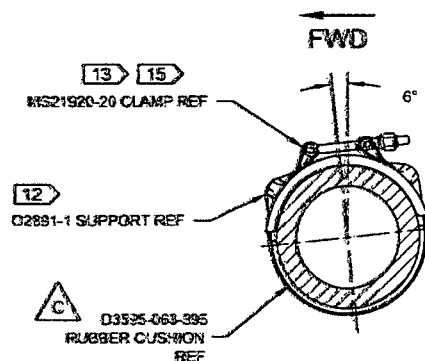
**NOTE:** Date & initial all entries



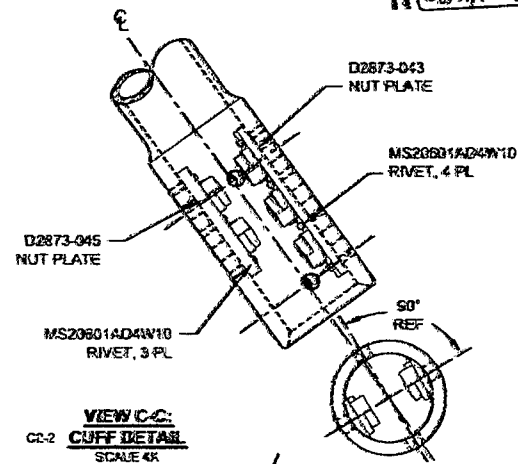
**D407-667-145**  
**ASSEMBLY DETAIL**  
(VIEW LOOKING FWD)



**VIEW A-A:**  
**CUFF DETAIL**  
SCALE 4X



**SECTION B-B**  
SCALE 5X



**VIEW C-C:**  
**CUFF DETAIL**  
SCALE 4X

DESIGN	REF	<b>DART AEROSPACE LTD</b>	
DRAWN	REF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	REF	DRAWING NO.	REV. 0
MFG. APPR.	REF	D407-667-145	SHEET 2 OF 4
APPROVED	REF	TITLE	SCALE
DE APPR.	REF	CROSSTUBE ASSY (487 HIGH FWD)	WTS
DATE	08.11.06	<small>DISPOSABLE TO BE USED BY DART AEROSPACE LTD THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE PURPOSES FOR WHICH IT WAS ISSUED AND NOT FOR OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.</small>	

W/D 55135

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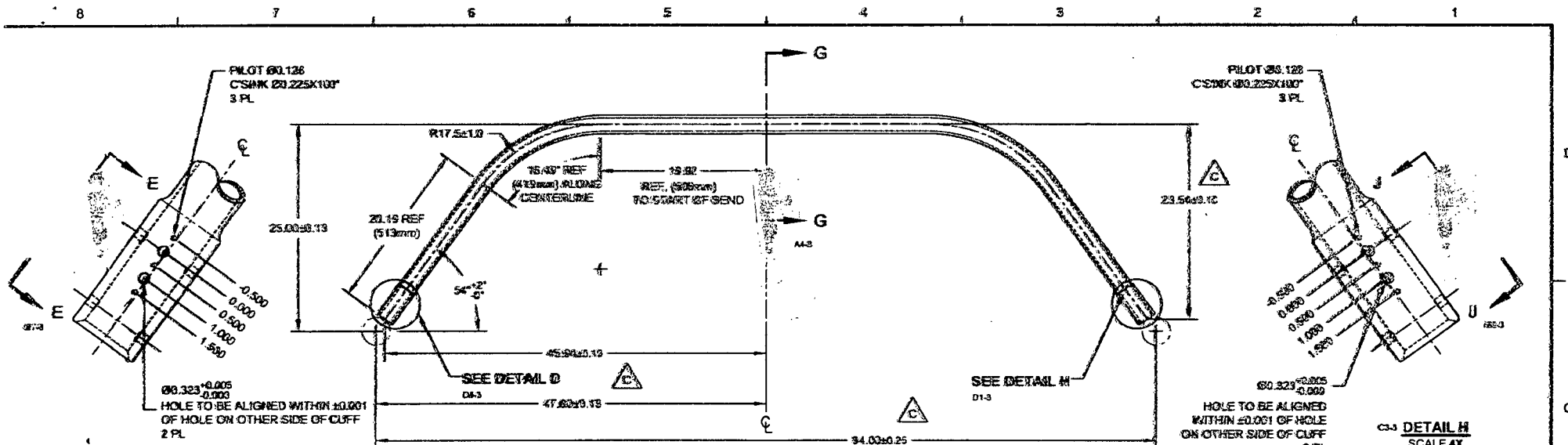
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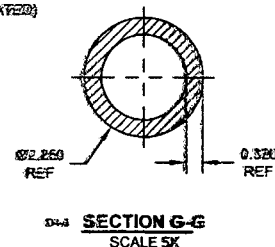
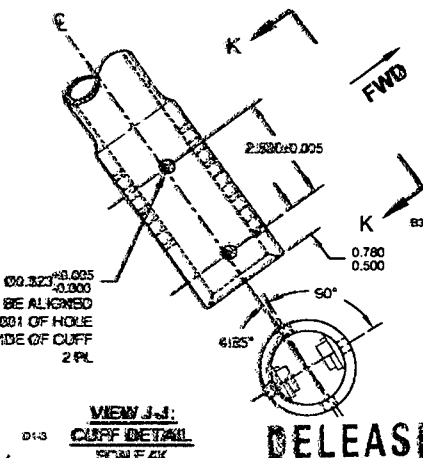
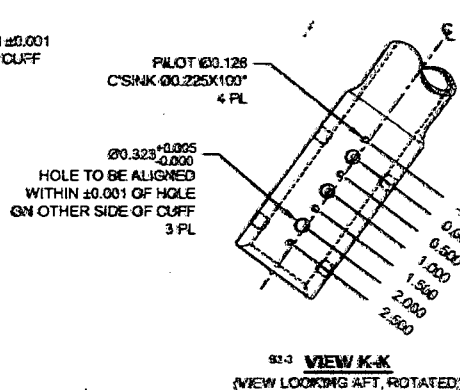
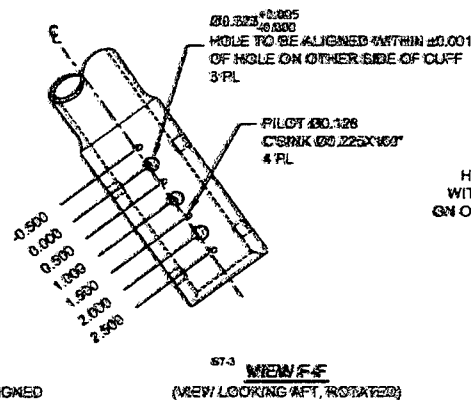
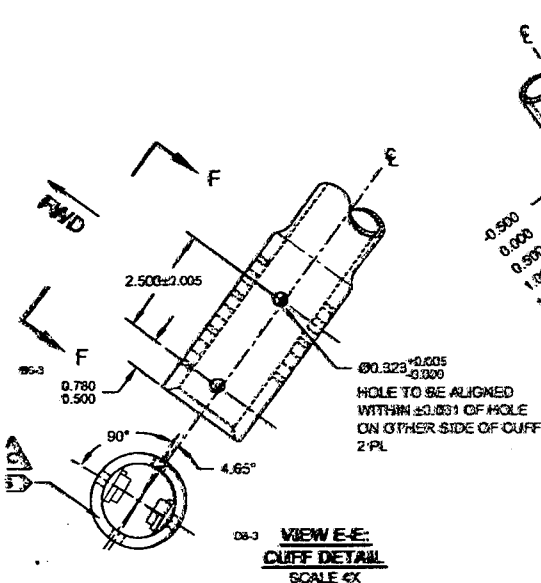




C5-3 **DETAIL D**  
SCALE 4X  
(VIEW LOOKING FWD)

**D407-667-505**  
**BENDING AND DRILLING DETAIL**  
(VIEW LOOKING FWD)

C3-3 **DETAIL H**  
SCALE 4X  
(VIEW LOOKING FWD)



410 50135

DESIGN	RF	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAMMERSLEY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D407-667-145	SHEET 3 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASSY (407 HIGH FWD)	NETS
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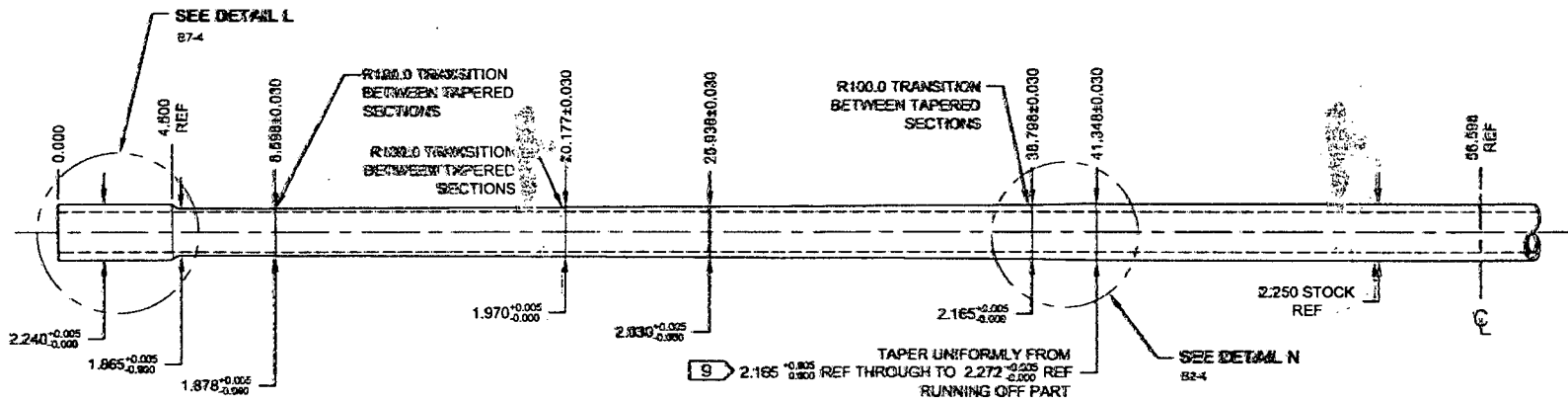
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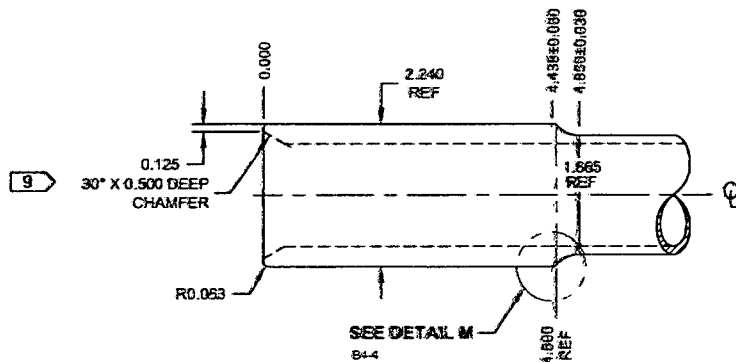
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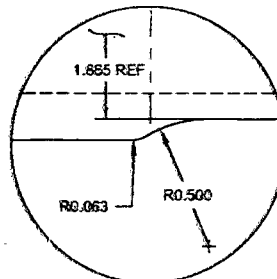
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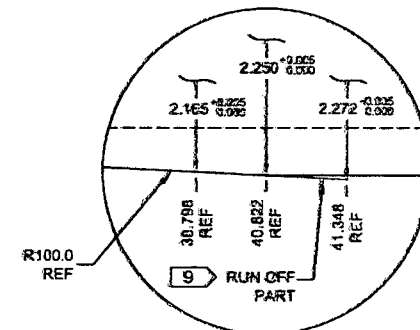
**C TURNING DETAIL**



**DETAIL L:  
CROSSTUBE CUFF**  
NOT TO SCALE



**DETAIL M:  
CUFF TRANSITION**  
NOT TO SCALE



**DETAIL N:  
TAPER RUN-OFF**  
NOT TO SCALE

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08/11/2006

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MFG. APPR.	CP	D407-667-145	SHEET 4 OF 4
APPROVED	CP	TITLE	SCALE
DE APPR.	CP	CROSSTUBE ASS'Y (407 HIGH FWD)	NTS
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